

A Review of *Principles of Behavior Analysis* by L. Grant and A. Evans

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Grant and Evans have created a text that extends the work of Keller, Schoenfeld, Holland, Skinner, Whaley, Malott, Miller, Catania, Englemann, Carnine, and others who have demonstrated how behavior analysis contributes to arranging learning environments (e.g., programmed instruction, personalized systems of instruction, and concept programming). They have presented the basic principles of behavior analysis arranged to promote learning these principles in the general case; that is, the range and limits of each principle are shown through many examples and nonexamples. They illustrate some of the contributions of behavior analysis to human learning of complex conceptual behavior through illustrations, summaries, and conceptual exercises.

The authors use actual illustrations from the research literature to engender careful analyses and potential disagreements. They suggest that this will allow for further refinements of the conceptual analyses as the instructor and students work through the text. Thus, they have prepared a structure that can produce general case learning yet is the catalyst for the evolution of the subject matter.

The first chapter introduces behavior and behavior analysis. Grant and Evans provide an easily understood practical rationale for describing behavior in specific terms and selecting behavior for analysis and change. For

example, they change summary labels such as “happy” to specific behavior descriptions such as “smiles or laughs.” Conceptual exercises at the end of the chapter have the student identify examples of the various ways of describing and selecting behavior. The authors’ analyses of appropriate ways to respond to the illustrations are presented at the end of the text as models to compare with students’ own analyses. The authors show how they responded to each item in the conceptual exercise and give their reasons for each response. The remaining 13 chapters each begin with a synopsis of a study from the published literature that illustrates the principles covered in the chapter. The remainder of each chapter defines and explains the principles, provides additional illustrations from the research literature, describes ways to make the application of the principles more effective, discusses theoretical or practical considerations regarding the principles, provides a summary of the chapter, and includes conceptual exercises with their analyses at the end of the book. These features allow an instructor who employs a mastery-based learning system to insure that students learn to apply the principles of behavior analysis to novel situations.

The first five chapters form a unit devoted to the critical features of behavior, behavior analysis, and basic behavioral processes such as reinforcement, extinction, and punishment. Grant and Evans begin with positive reinforcement, as is usually done when introducing behavior analysis. But they subsequently depart from the usual sequence by moving to the behavior-weakening processes of

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extinction, differential reinforcement of other behavior (DRO), and differential reinforcement of incompatible behavior (DRI) in chapter 3, then to punishment in chapter 4, and finally to escape and avoidance in chapter 5. This follows a simple-to-complex sequence rather than the typical presentation of all of the processes that strengthen behavior followed by all of the processes that weaken behavior. The simple-to-complex sequence permits clear discriminations to be developed among the processes by making the differences in critical features more obvious. This may assist students as they encounter the features of a contingency analysis for the first time.

Chapter 6 addresses how to establish behavior that is not currently in the learner's repertoire via shaping and how to maintain established behavior using schedules of reinforcement. The authors bring antecedent events into contingencies by presenting stimulus discrimination in chapter 7 and prompting, fading, and chaining in chapter 8. Generalization is described in chapter 9, showing how all three terms of a contingency can operate together to achieve generalization of behavior change.

The next three chapters address processes that involve the more complex antecedent events of modeling (chapter 10) and rules (chapter 11) and the more generic consequence called feedback (chapter 12). The designation of *feedback* as a category of behavioral consequences is potentially confusing because it is comprised of all the types of consequences already presented. This lumping of functions under one formal category may obscure the possible stimulus functions. Pavlovian conditioning and its relation to operant conditioning is presented next (chapter 13). The authors introduce the concepts of stimulus classes and response classes and discuss their importance in analysis, conceptual behavior, generalized response classes, and equivalence

classes in the last chapter of the book (chapter 14).

An important feature of the text is those sections devoted to describing ways that will make a process effective. These sections distill what the research literature shows are practical ways of enhancing the effectiveness of processes. The student is thereby given the details necessary to describe how what he or she has learned might best apply to a particular situation. This effort by the authors to assure that all necessary details are presented is both a strength and a possible weakness. The weakness is that instructors and students may be tempted to memorize specific details. A potential safeguard against this problem is the availability of the conceptual exercises.

Advanced considerations are offered by the authors at the end of five of the chapters. In the chapters on extinction, DRO, DRI, punishment, escape, avoidance, shaping, and schedules of reinforcement, alternative theoretical explanations are presented.

The pedagogical features of this book make it a highly useful tool for students to master the rules and principles of behavior analysis. The authors field tested the book in their own and others' classes. These tests indicated that students liked reading about the real-life, concrete, human examples that are presented in the text. The book is clearly an introductory text and is thus suited for introductory behavior analysis courses at the undergraduate and even graduate level. It can be used for classes in behavior analysis, psychology, education, special education, and other human services fields. It can be an effective companion to edited volumes of readings on behavioral approaches to a particular field or specialty, or in conjunction with selected articles or monographs. In this context it can provide the basic knowledge for understanding and constructively critiquing the behavioral literature. Individual instructors may wish to add their own examples and caveats to the presentation of rules and principles. This can help to tailor the course to the

needs of a particular student group and to clarify some of the newer or more controversial aspects of behavior analysis (e.g., stimulus equivalence or punishment). The structure of the text allows for this while providing the in-

structor with more than sufficient references and examples. If you are an instructor of such a course, I encourage you to order an examination copy and see for yourself how it may serve your students.